W nd Applications Center

Kansas

Home | Wind for WfS Schools | Links | WAC FAQ

Our Mission

The Kansas WAC missions are to educate electrical engineers on the basics of wind energy, and to be a source of information on wind energy for the people of Kansas, who want to harvest wind power for the benefit of themselves, their children and the state. If you have questions about how wind power might benefit you, please contact us and we'll be happy to help you.

News

The **Kansas Energy Office** (KEO) hopes to be able to offer grants to public entities, including schools, to fund 25% of the total project cost, up to $250,000, for installation of renewable electricity generation, including solar, wind, hydro or biomass. Watch their website for updates.

WAC Projects

- **Wind for Schools!- Click the WfS link above**
- Anemometer Loan Program. Contact us if you are interested.
- Wind turbine micro-siting: where on my land would work best?
- Wind energy estimates for specific sites
- Low-level wind speed and turbulence modeling
- Networked control of small wind turbines

Other Wind Applications Centers

- Wind Powering America **Wind-for-Schools** site
- **South Dakota State University WAC**
- **Boise State University WAC** (live turbine data available)
- Colorado State University WAC
- University of Nebraska WAC
- **Montana State University WAC** (live turbine data available)

Kansas Rural Center

Dan Nagengast is the Wind Facilitator for Kansas and the Rural Center website is the best place to start for questions regarding land leasing and community forums. See also the links tab.

photo by Jen Johnson, MA Journalism KS

the Wind for Schools site you will find the Application
rocess, Estimated Costs, Parts Lists and other critical
information

KANSAS RURAL CENTER

Wind Energy Projects

Kansas Rural Center Wind Energy Projects

Coordinator: Dan Nagengast,
Executive Director, Kansas Rural Center
dan@kansasruralcenter.org

- Wind for Schools
- Regional Wind Energy Forums
- Energy Facts & Figures for Rural Kansas

The Kansas Rural Center has a long history of advocacy on energy issues, dating back to the 1980s. However, with the turn towards renewable energy, KRC has undertaken various projects that seek to put wind turbines on the ground, assist rural communities with understanding the issues around wind energy development, and advocate

on, Colorado

sas is one of six pilot states: Colorado, Montana, Idaho, Nebraska, S.
ota & Kansas.

Wind Applications Center at KSU, and the Kansas Rural Center are P
ners

goal is to install 2.4 KW Skystream Wind Turbines at 15 schools betw
-2010

aim is to train young engineers for jobs in the wind industry and to inc
c awareness and understanding of wind power

ools receiving WfS turbines are expected to incorporate education abo
energy into their science, math and social studies curriculum, includi
turbines work and to collect, process and understand the data turbine
de.

cond goal is to establish a fully functioning Wind Applications Center

W nd Applications Center

Kansas

Home

Wind for WfS Schools

Links

WAC

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News

Kansas Energy
e (KEO) hopes to
le to offer grants
public entities,

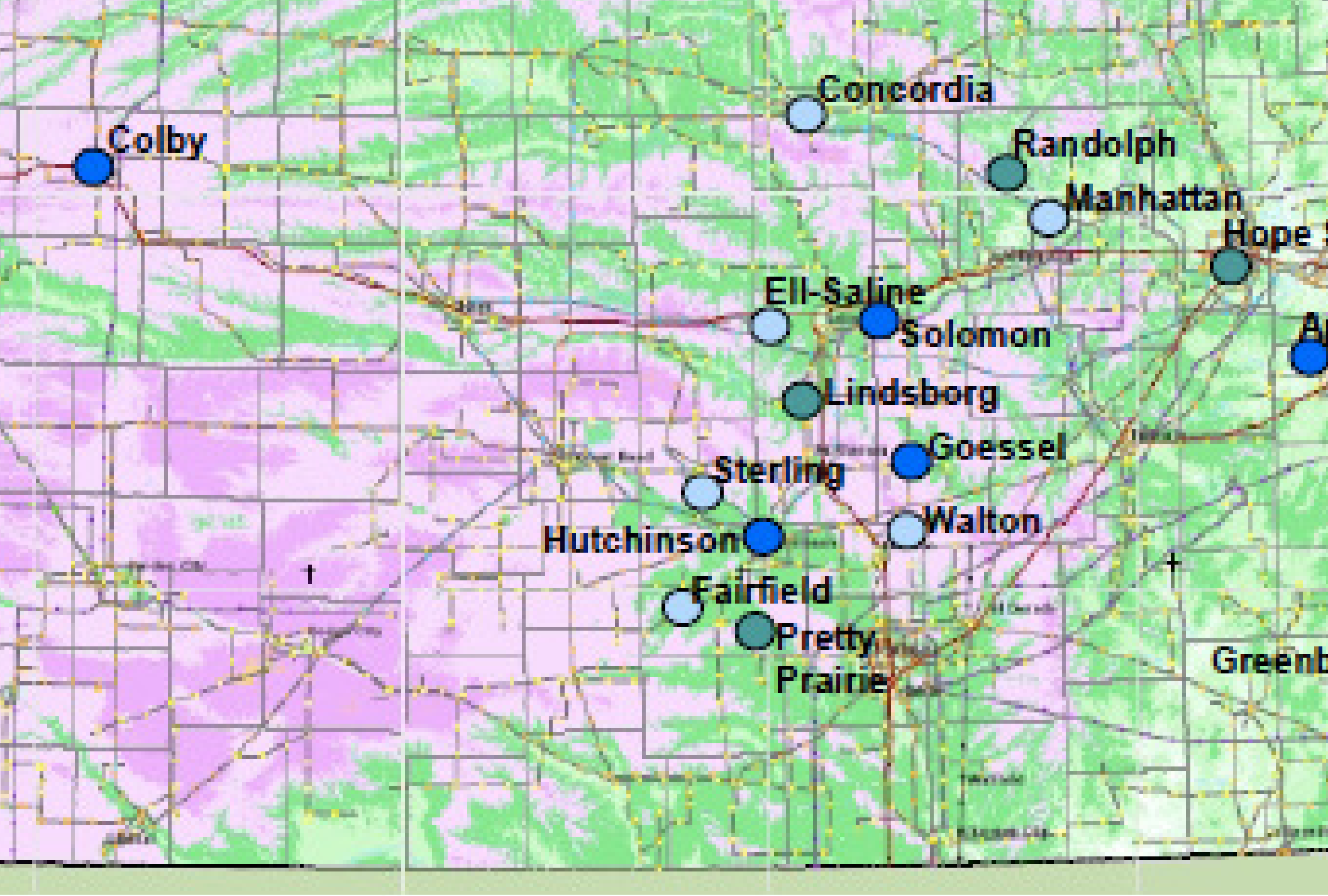
WAC Projects

nd for Schools Project

Erection of Skystream Wind Turbine at Fairfield High School in Langdon, Kansas


smalley
energy.com


Skyatream Turb A:
Waiting -001W
000rpm 23°
Select Tools
STREAM 3.7™
e interface
escape
enter
status


Concordia
Colby
Randolph
Manhattan
Hope
Ell-Saline
Solomon
Lindsborg
Goessel
Sterling
Walton
Hutchinson
Fairfield
Pretty
Prairie

List of all Accepted Schools
Academic Year 2007-2008

oncordia School District USD 333 CONCORDIA, KS 66901*

l-Saline USD 307 BROOKVILLE, KS 67425*

airfield High School USD 310, LANGDON, KS 67583*

terling USD 376 STERLING, KS 67579*

alton Rural Life Charter Elementary – Newton Public Schools
SD 373, WALTON, KS 67151*

ansas State University, Manhattan, KS 66506*

Turning

Pretty Prairie, KS (USD 311)*

Blue Valley Schools, Randolph, KS (USD 384, Riley Co.)

Deerfield, KS (USD 216, Kearny Co.)**

Rolla HS, Rolla KS (USD 217, Morton, Co)***

Southeast Kansas Education Service Center Interlocal 6
(Greenbush) , Girard, Kansas 66743*

South Barber District, Kiowa, KS (USD 255, Barber Co)***

Turning
****On-Hold due to Budget Cuts***
***** Withdrew to seek a larger turbine***

Academic Year 2009-10

Colby County Community College, Colby, KS

Appanoose Elementary School, USD 287, KS 66076

Hope Street Academy, Topeka, KS 66604

Solomon Schools USD 393, KS 67480

Lindsborg, USD 400, Smoky Valley KS

Goessel, KS*

Hutchinson School District, USD 308*

****Added to replace withdrawn schools***

Real-Time Wind Turbine Data Graphs

October

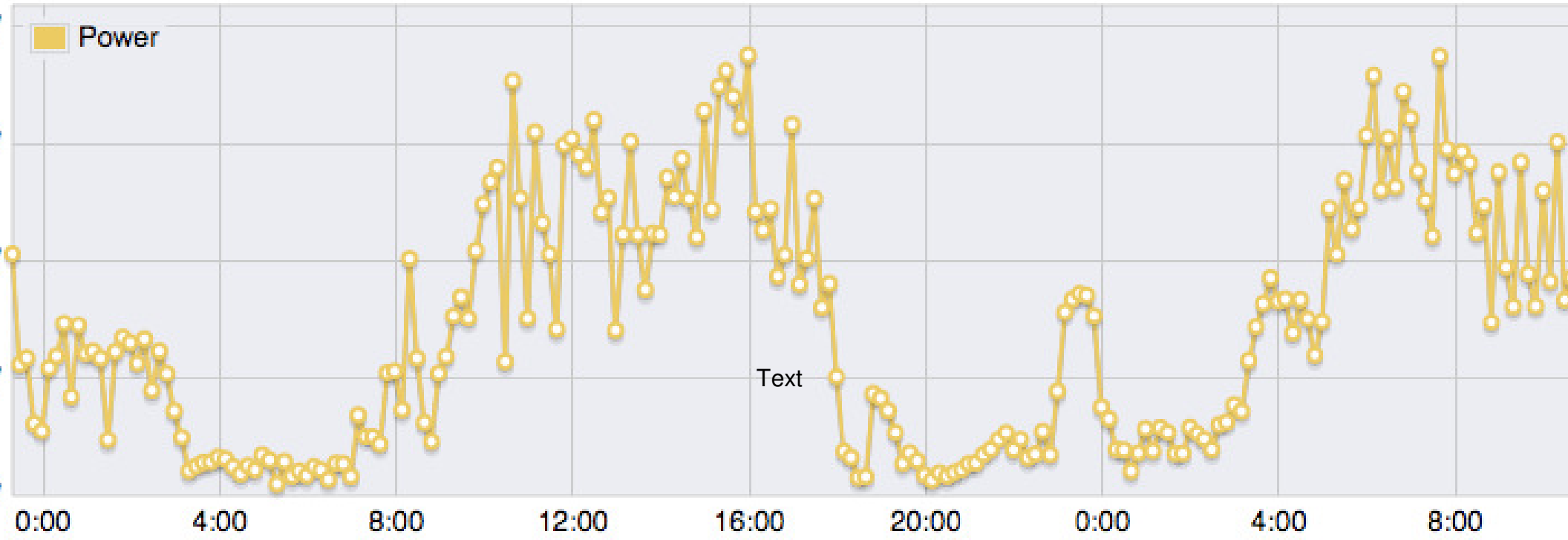
Show/Hide Filter

URL

Reset

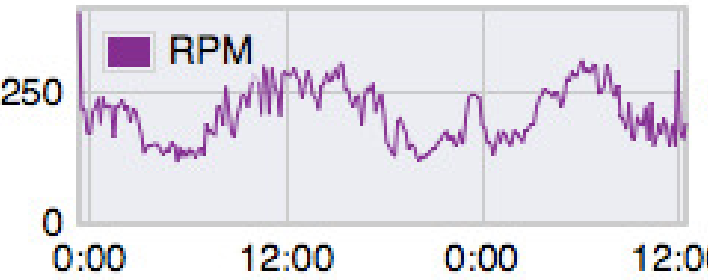
http://wind.usd384.org/tenminaverage_ss2009_10.csv

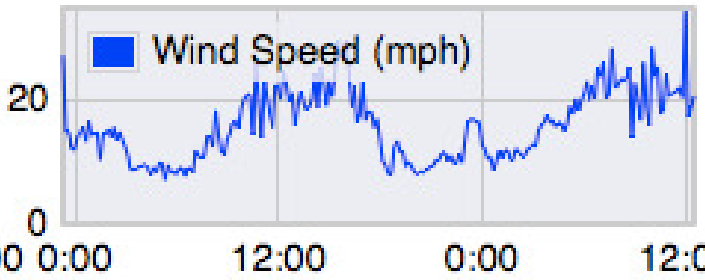
Power: pt->212@ x:11Hrs.:38Min, y:929.5

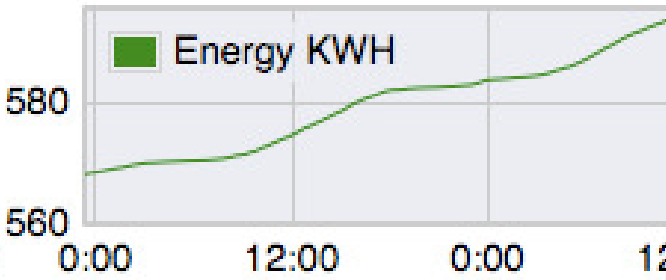


Selection Overview

Mouse hovers at (22:1, 2111.40).







USD 384 Blue Valley Wind Turbine

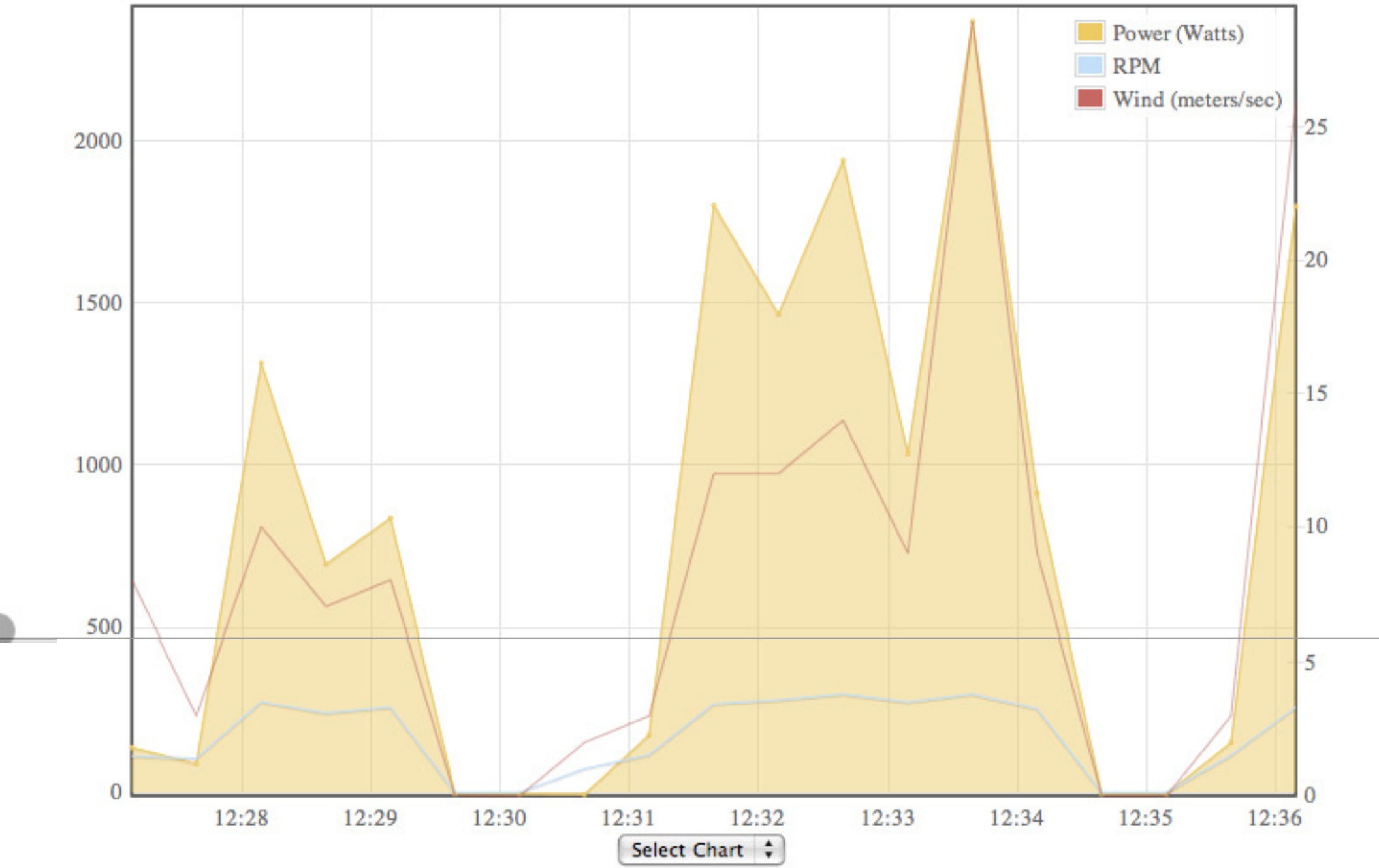
```
   *** USD 384 Blue Valley Current Readings ***

Last update: 2009-10-02 12:36:39.0
Status - Turbine:0127, System:0400, Grid:0000

power:          -4.0 Watts
Turbine Speed: 0.0 RPM
Wind Speed:    0.0 m/s,0mph
Daily Energy:    12.21 KWatt-Hrs
Total Energy:    595.49 KWatt-Hrs

            *** Averages for last ten minutes ***

Avg power:       735.25 Watts
Turbine Speed:   163.55 RPM
Wind Speed:      7.75  m/s 17.34 mph

* windspeed is for reference only
```

Real Time Charts

Interactive Chart

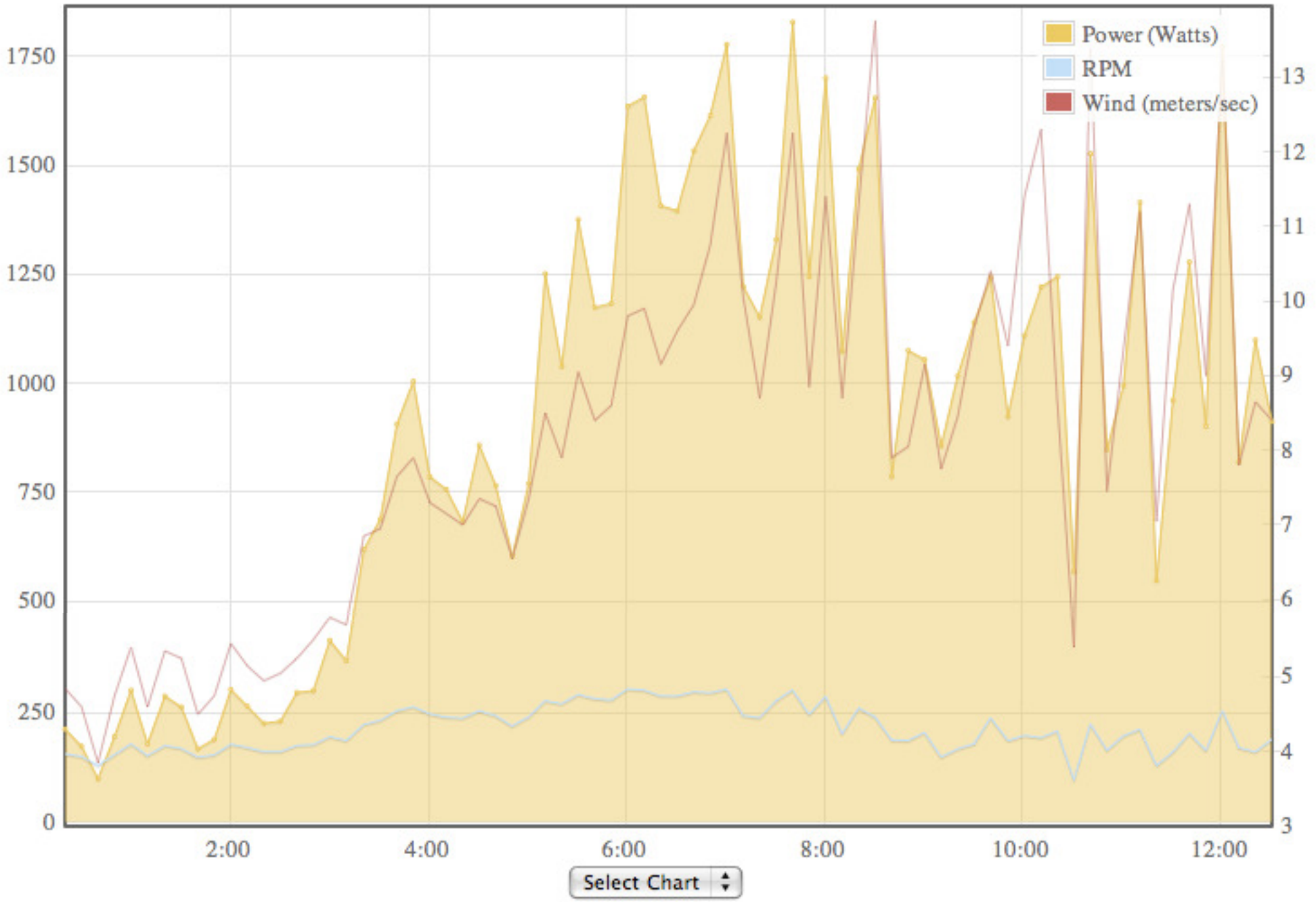
[October 2009](#)
[September 2009](#)
[August 2009](#)
[July 2009](#)

[Ten Min Average October 2009](#)



Interactive plot,turn data on/off with the checkboxes below.

Show: ☑ Power (Watts) ☑ RPM ☑ Wind (meters/sec)



Interactive plot,turn data on/off with the checkboxes below.

Show: ☑ Power (Watts) ☑ RPM ☑ Wind (meters/sec)

e, Power(watts), RPM, Wind(meters/sec), TotalEnergy(Watt-Hrs)
30/2009 23:07:30:CDT, 462.8, 200.15, 5.9, 568120.2
30/2009 23:17:30:CDT, 569.5, 202.1, 6.25, 568198.5
30/2009 23:27:30:CDT, 561.4, 215.2, 6.6, 568293.2
30/2009 23:37:30:CDT, 588.65, 218.7, 6.65, 568385.05
30/2009 23:47:30:CDT, 308.85, 173.8, 5.5, 568460.7
30/2009 23:57:30:CDT, 276.5, 168.6, 5.35, 568507.4
01/2009 00:07:30:CDT, 546.85, 211.95, 6.25, 568592.25
01/2009 00:17:30:CDT, 596.75, 220.4, 6.5, 568675.55
01/2009 00:27:30:CDT, 735.85, 237.9, 7.0, 568780.05
01/2009 00:37:30:CDT, 421.75, 189.25, 5.95, 568858.55
01/2009 00:47:30:CDT, 727.85, 239.15, 7.4, 568960.65
01/2009 00:57:31:CDT, 606.9, 219.95, 6.4, 569073.6
01/2009 01:07:30:CDT, 617.2, 223.2, 6.5, 569166.7
01/2009 01:17:31:CDT, 587.15, 222.6, 6.55, 569264.05
01/2009 01:27:31:CDT, 238.75, 164.0, 4.65, 569340.6
01/2009 01:37:31:CDT, 615.15, 221.55, 6.5, 569407.0
01/2009 01:47:31:CDT, 674.85, 223.45, 6.5, 569501.5
01/2009 01:57:31:CDT, 652.6, 234.65, 6.85, 569607.05
01/2009 02:07:31:CDT, 565.8, 214.95, 6.25, 569705.6
01/2009 02:17:31:CDT, 668.4, 223.9, 6.95, 569809.65
01/2009 02:27:31:CDT, 449.95, 191.25, 6.05, 569902.2
01/2009 02:37:31:CDT, 617.9, 219.6, 6.65, 569980.75
01/2009 02:47:31:CDT, 522.15, 211.15, 6.1, 570063.05

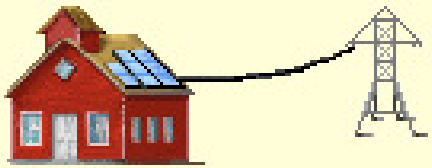
orm Corporation

ast Kansas Education Service Center — Girard, KS

Simple | Detail

46 AM Oct 07, 2009 — System Size: 2.6 kW DC

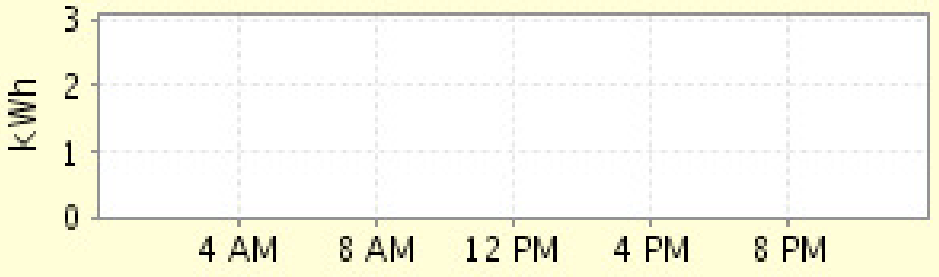
rating 0 W



Local Weather

al | Today | Week | Month | Year | Lifetime

erated 0 kWh

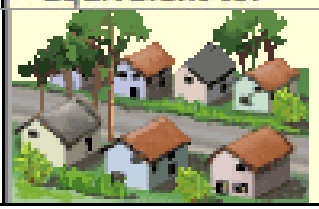


ouse Gases Avoided Since Installation Sep 19, 2008

CO_2 0 lbs.

household CO_2 output is 22,750 lbs./yr.

Equivalent to:



The energy to power 0 homes for one day.

The energy to operate a TV for 0 hours.

W Simple Detail 2.6 kW

AC OUTPUT DC INPUT

Energy Power Voltage Current

Energy Data Download Environmental

Today Week Month

CSV

Last update 6:46 AM Oct 07, 2009

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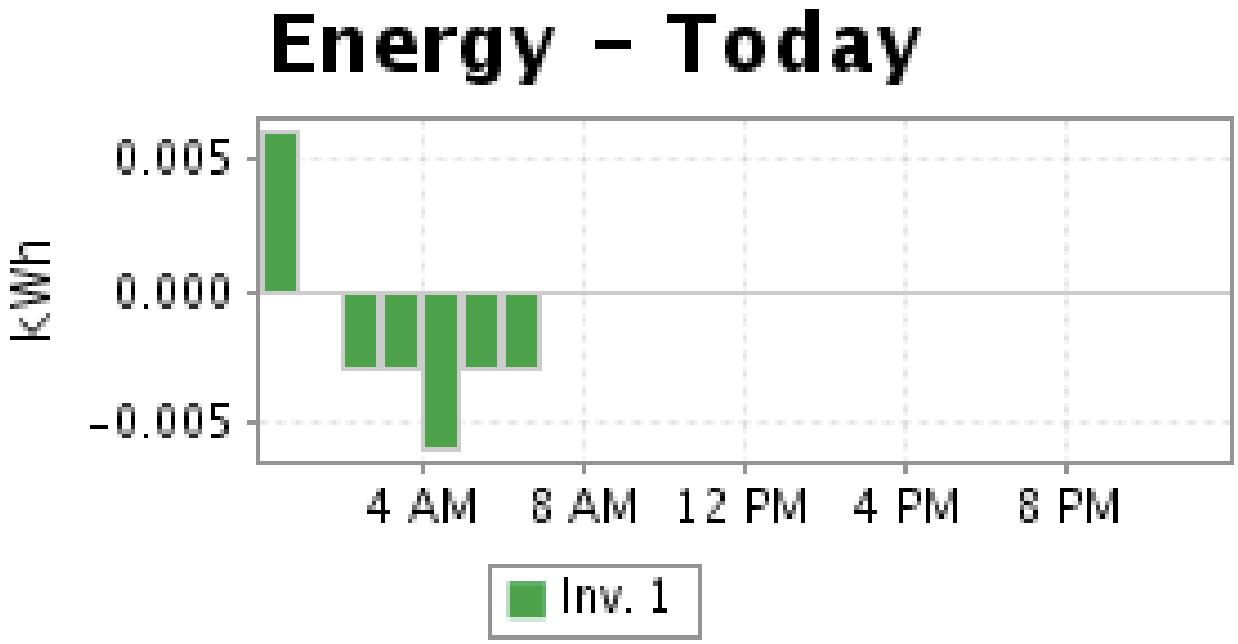
-0.0 kWh



Southeast Kansas Education Service Center — Girard, KS

VIEW | Simple | Detail | 2.6 kW

AC OUTPUT | DC INPUT

Energy | Power | Voltage | Current

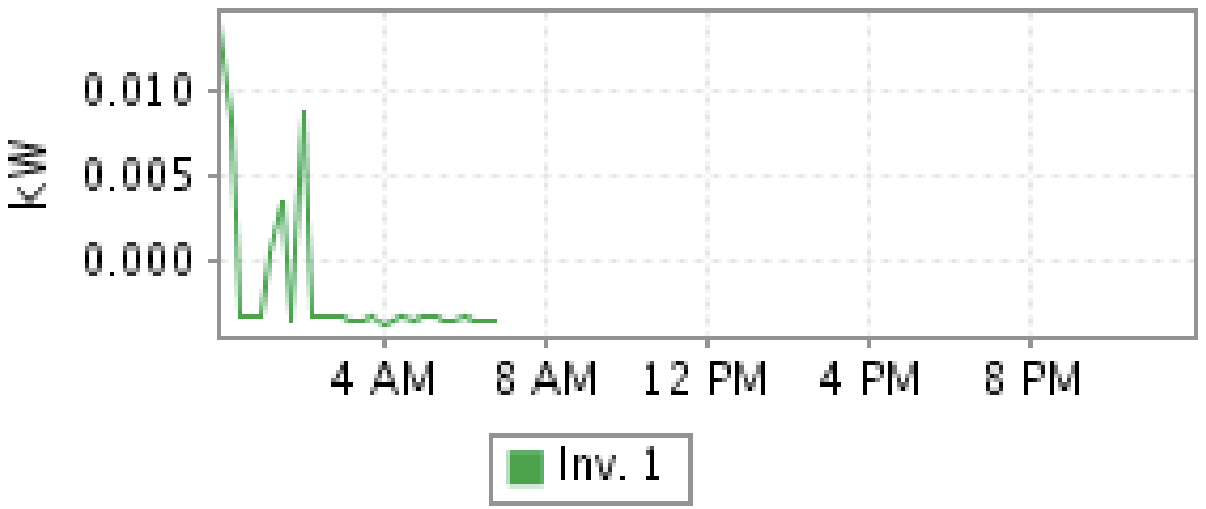
AC Power | Performance | Environmental

Today | Week | Month

Last update 6:53 AM Oct 07, 2009

enla

Inv. 1 -0.0 kW



outheast Kansas Education Service Center — Girard, KS

VIEW Simple Detail 2.6 kW D

AC OUTPUT DC INPUT

Energy Power Voltage Current

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Today Week Month

Last update 6:53 AM Oct 07, 2009

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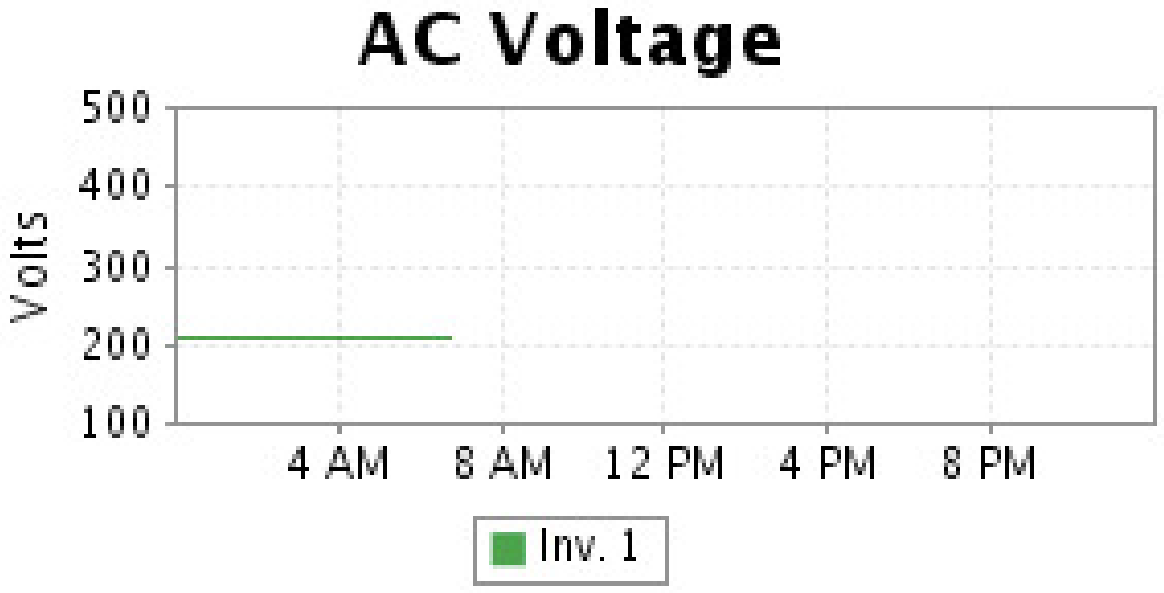

EW Simple Detail 2.6 kW

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Today Week Month

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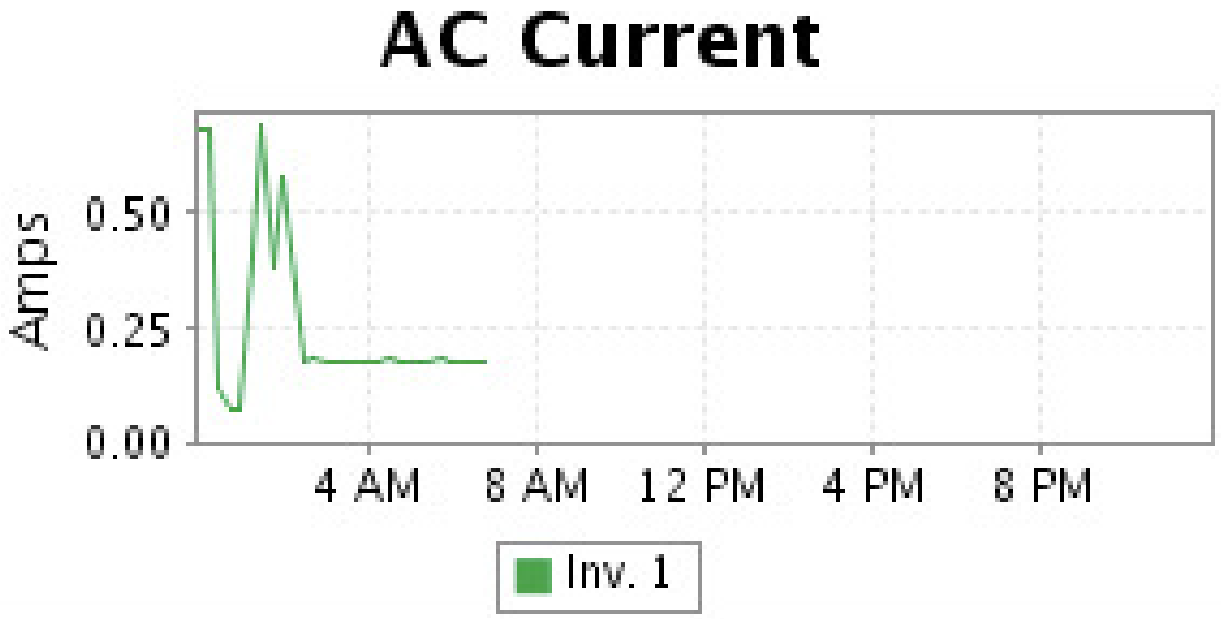

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Wind Powering America

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Wind Energy Curricula, Tutorials, and Teaching Materials

Find wind energy curricula and teaching materials for both younger and older students. Some of the following documents are available as Adobe Acrobat PDFs. Download Adobe Reader.

Younger Students

- **California Energy Commission**
  Developed a set of educational materials called "Energy Quest."
  - Energy Quest: Wind Energy
  - Measuring the Wind Project
  - Making an Anemometer Project (a device to measure wind speed)

- **Danish Wind Energy Association**
  "Wind with Miller" provides information in short bits, uses interactive tools (calculators, sliding scales, drop-down lists), and presents information with colorful, moving diagrams. The lessons are short and fun!

- **DOE Energy Information Agency**

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The NEED Project — http://www.need.org/

NEED Project

Putting Energy into Education

Wednesday, October 7, 2009

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The mission of the National Energy Education Development Project is to promote an ene conscious and educated society by creating effective networks of students, educators, busine government and community leaders to design and deliver objective, multi-sided energy educat programs. NEED works with energy companies, agencies and organizations to bring balanced ene programs to the nation's schools with a focus on strong teacher professional development, timely balanced curriculum materials, signature program capabilities and turn-key program management.

October is Energy Awareness Month! Join us for workshops, use the lessons and activities highlighted the NEED **Energy Awareness Month** site, and try the lessons in the October issue of **Energy Exchange** Want a class-set of National Ocean Industries Association Activity Books? Email info@need.org.

Visit NEED's **photo gallery** - the **2009 Youth Awards Photos** are available!

Join NEED on **Facebook!**

Dr. Ruth Miller
KSU Wind Applications Center
rdmiller@ksu.edu
http://www.eece.ksu.edu/psg/wac/

Dan Nagengast
Kansas Rural Center
nagengast@earthlink.net
www.kansasruralcenter.org